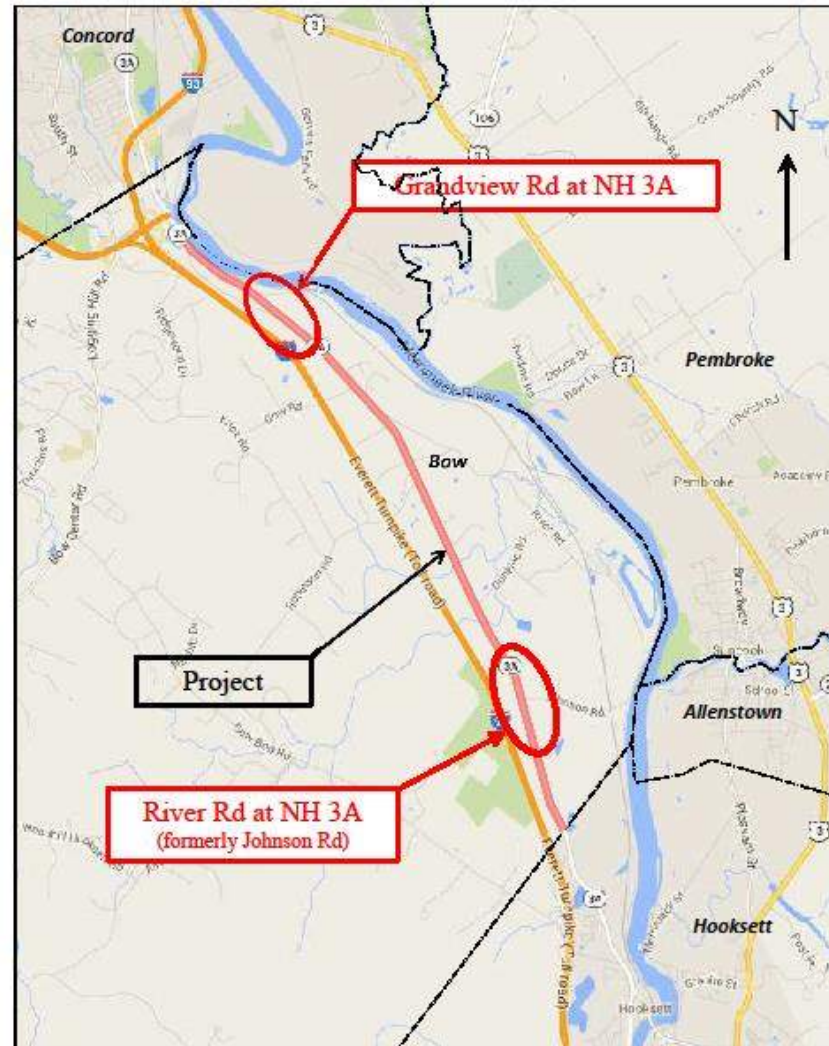


NHDOT Project 29641


NH Route 3A

Bow, NH

Project Location

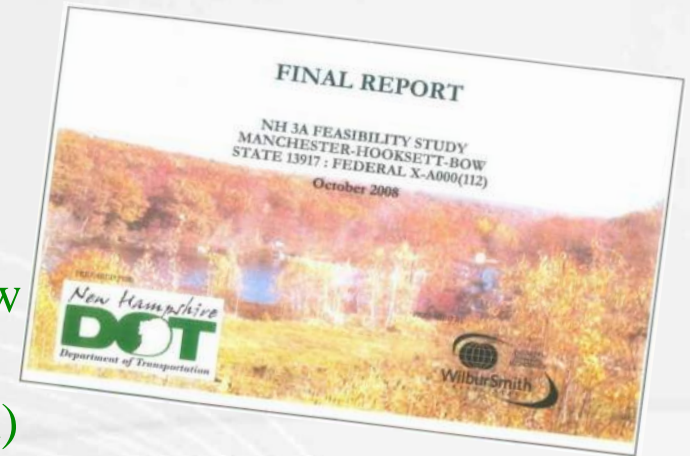


Bow 29641
X-A004(223)
NH 3A improvements

 Areas of Concentration

History

- October 2008 – NH 3A Feasibility Study
 - Identified 4 intersections in Bow for possible improvements
 - Johnson Rd (now River Rd)
 - Dunklee Rd
 - Robinson Rd/Audley Dr
 - Grandview Rd
- August 16, 2017 – Project Scoping Meeting with Town and CNRPC
 - Two intersections selected for development of concept plans and estimates
 - Johnson Rd (Now River Rd)
 - Grandview Rd



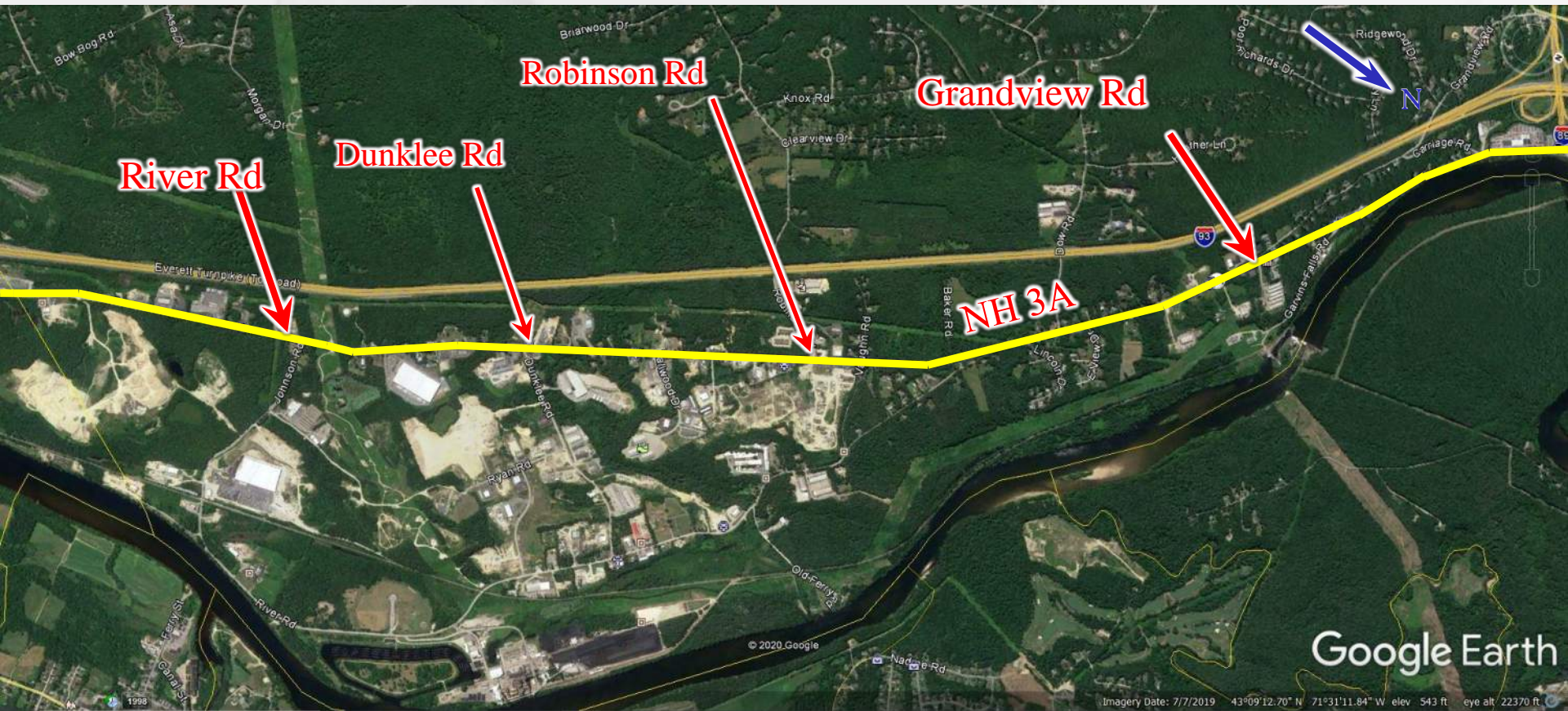
History

- June 19, 2020 –Meeting with Town and CNRPC
 - Reviewed the conceptual improvement designs and estimates for the two selected intersections.
 - Johnson Rd (Now River Rd)
 - Grandview Rd

Goals of Today's Meeting:

- **Present the improvement concepts to the Board of Selectmen**
- **Obtain agreement to move forward with these designs for the 2 selected intersections.**

Aerial Overview



Aerial Overview - South



Aerial Overview - Middle



Aerial Overview - North



River Rd (formerly Johnson Rd)



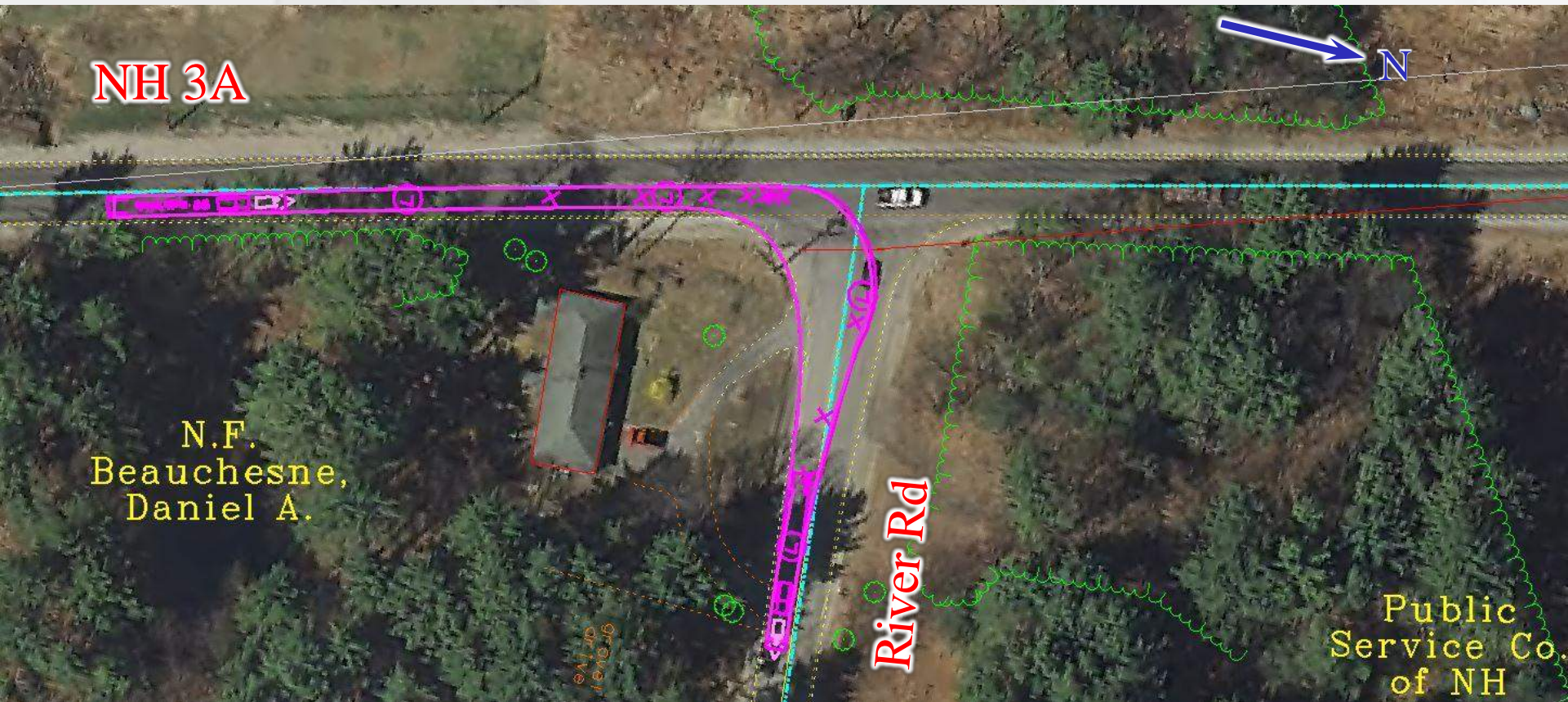
River Rd (formerly Johnson Rd)

Existing River Rd (south) (formerly Johnson Rd) Intersection

- No turn lanes on NH 3A
- Narrow 1' to 2' shoulders
- Speed: Posted 40 mph
- River Rd speed: Posted 30 mph
- The intersection is located just 240 feet south of the crest of a vertical curve on NH 3A
- The Intersection Sight Distance is only 415' (good for 36 mph) and likely less in the winter.

Google Earth

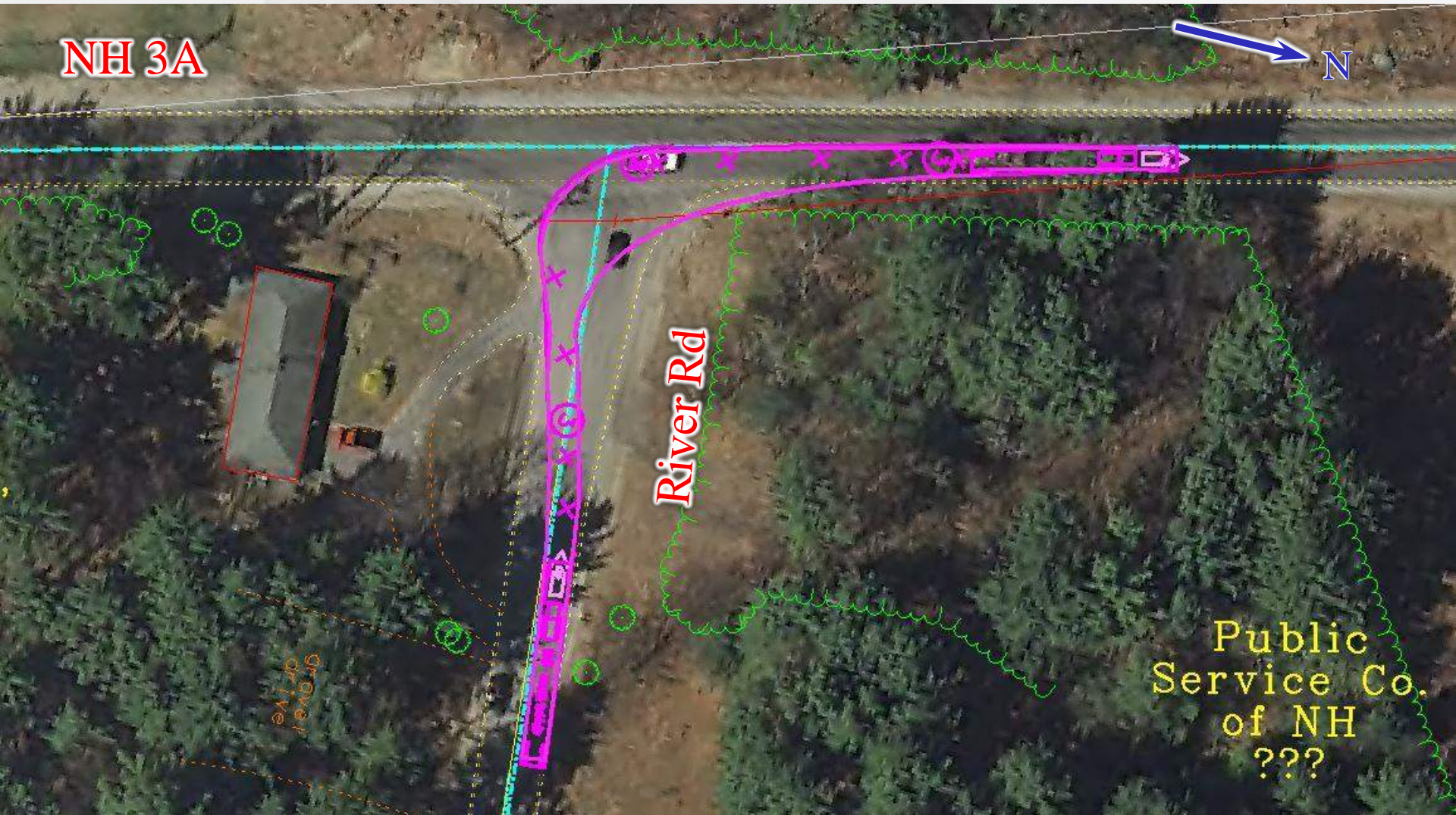
River Rd (formerly Johnson Rd)



Turning movements

NH 3A northbound trucks turning right onto River Rd were observed to encroach upon the NH 3A southbound lanes and utilize the full width of River Rd.

River Rd (formerly Johnson Rd)



River Rd (formerly Johnson Rd)

Poor sight distance
Looking north
(good for only 36 mph; less in
the winter)



River Rd (formerly Johnson Rd)

2008 Corridor Study Recommendation

– 2 alternatives

1. Signalized intersection with SB left turn lane and NB right turn lane
2. Roundabout

However, a closer look revealed:

- River Rd traffic volumes are much less than what was shown in the corridor study.
- Signal warrants are not met
- Auxiliary turn lane guidelines are:
 - met for a NB right turn lane in the AM
 - Only barely met for a SB left turn lane in the future 2042 AM
- Of the 8 crashes that occurred between 2007-2017, none appeared to have been southbound rear enders correctable by a left turn lane.
- The improved Dunklee Rd intersection should attract some of the southbound lefts.

River Rd (formerly Johnson Rd)



Controls/Sensitive Areas

- Overhead Transmission lines crossing NH 3A just north of River Rd and the service lines parallel to NH 3A
- House at 34 River Rd (north side, 265 feet east of NH 3A)
- Patty Lee's Kitchen and Ice Cream shop/Residential House at southeast corner of NH 3A and River Rd.
- Water main under NH 3A and River Rd.

River Rd (formerly Johnson Rd)



Goals/Recommendations

- Improve the intersection sight distance
- Accommodate the heavy truck turning movements
- *Shoulder widening for improved all season sight distance could essentially serve as a right turn lane.*

Google Earth



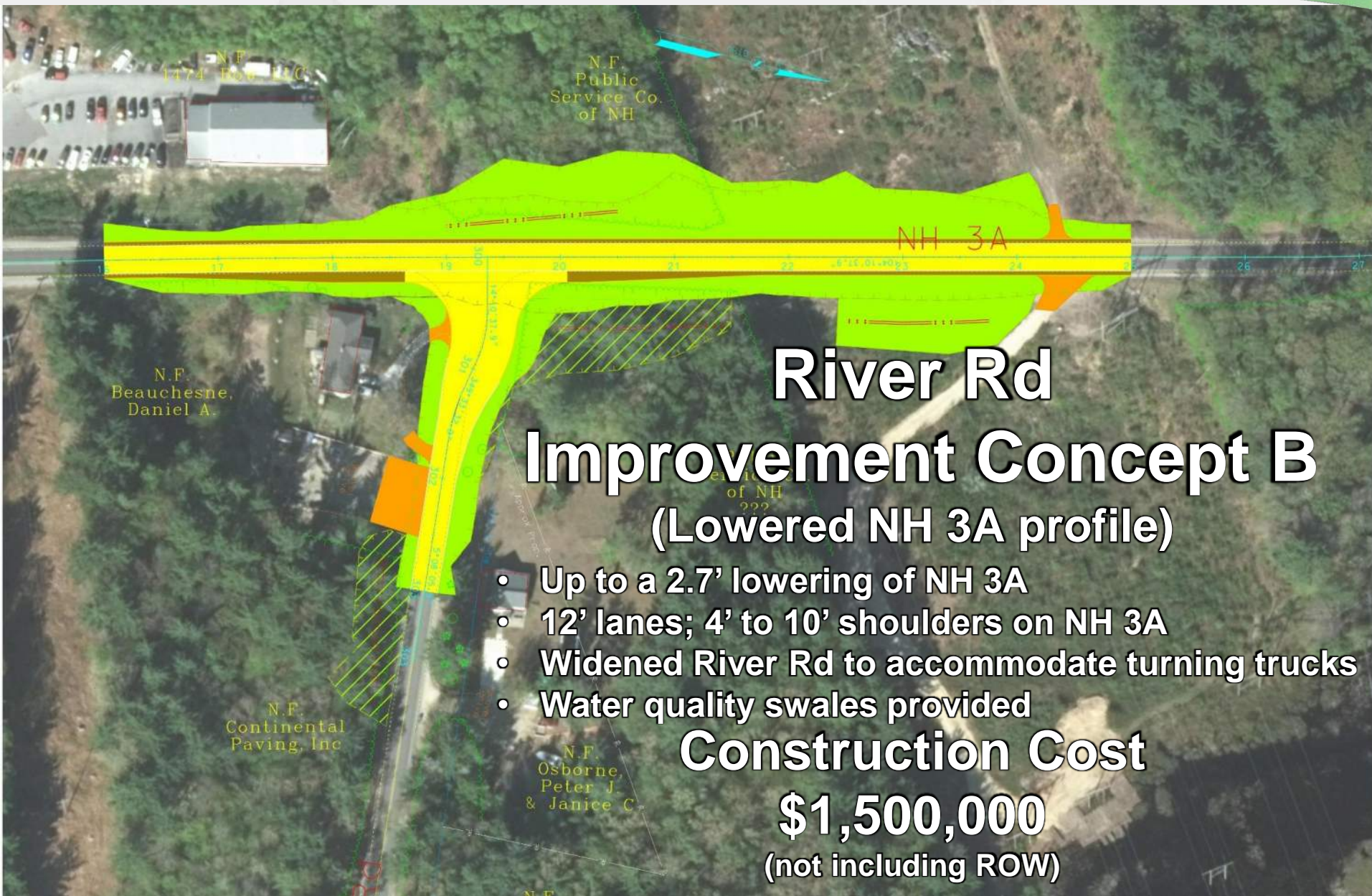
River Rd Improvement Concept A

(Relocation of River Rd)

- No change in NH 3A profile
- 4'-10' shoulders on NH 3A
- River Rd relocated and widened
- Water quality swales provided

Construction Cost \$930,000

(not including ROW)



Alternative Comparisons

Concept A

Relocated River Rd

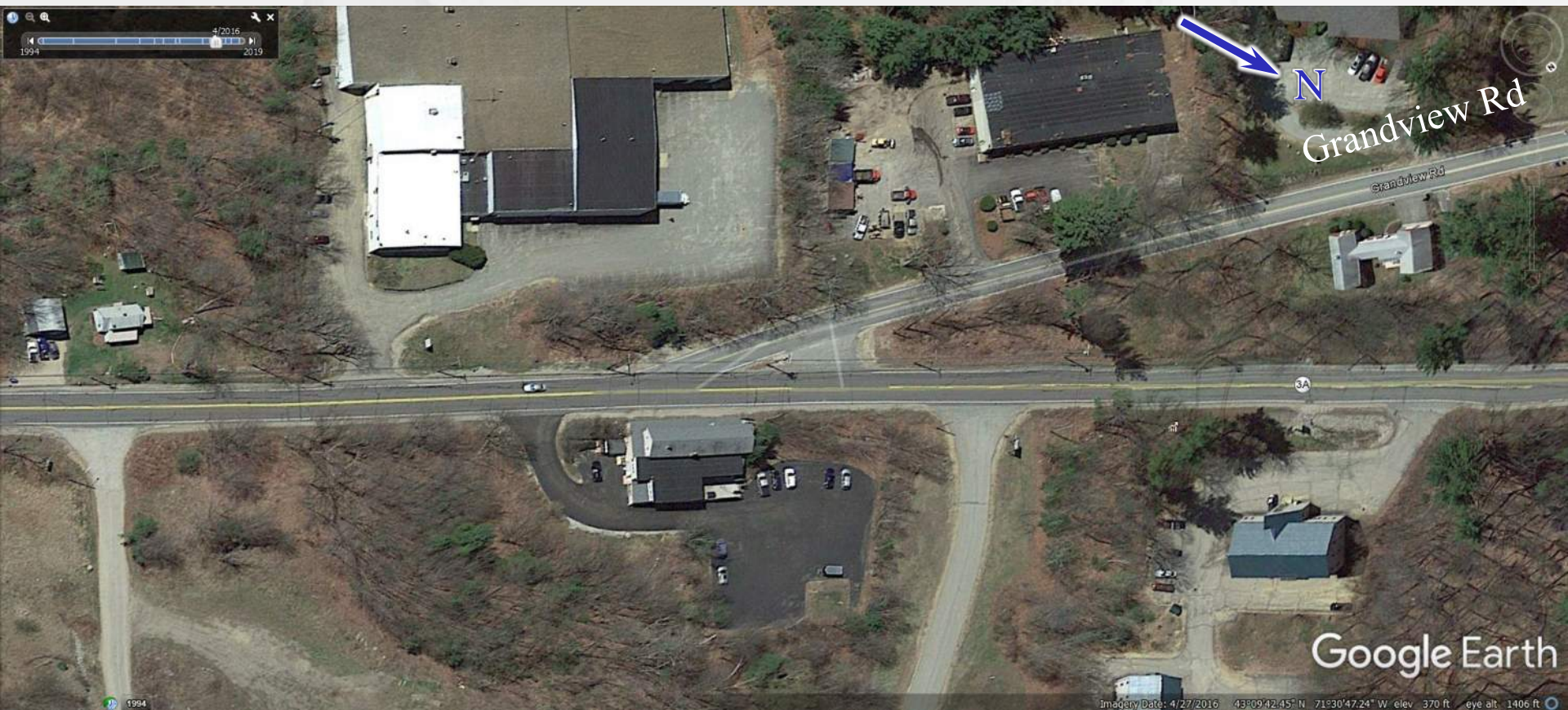
- Advantages:
 - Minimal impact to NH 3A
 - Unlikely to impact water main
 - Lower Construction Cost
- Disadvantages:
 - Greater ROW impacts
 - Larger area of disturbance

Concept B

Lowered NH 3A Profile

- Advantages:
 - Less ROW impact
 - Smaller footprint/disturbed area
- Disadvantages:
 - Greater impact to travelers along NH 3A during construction
 - Likely requires lowering or relocating of water main
 - Greater Construction cost

Grandview Rd



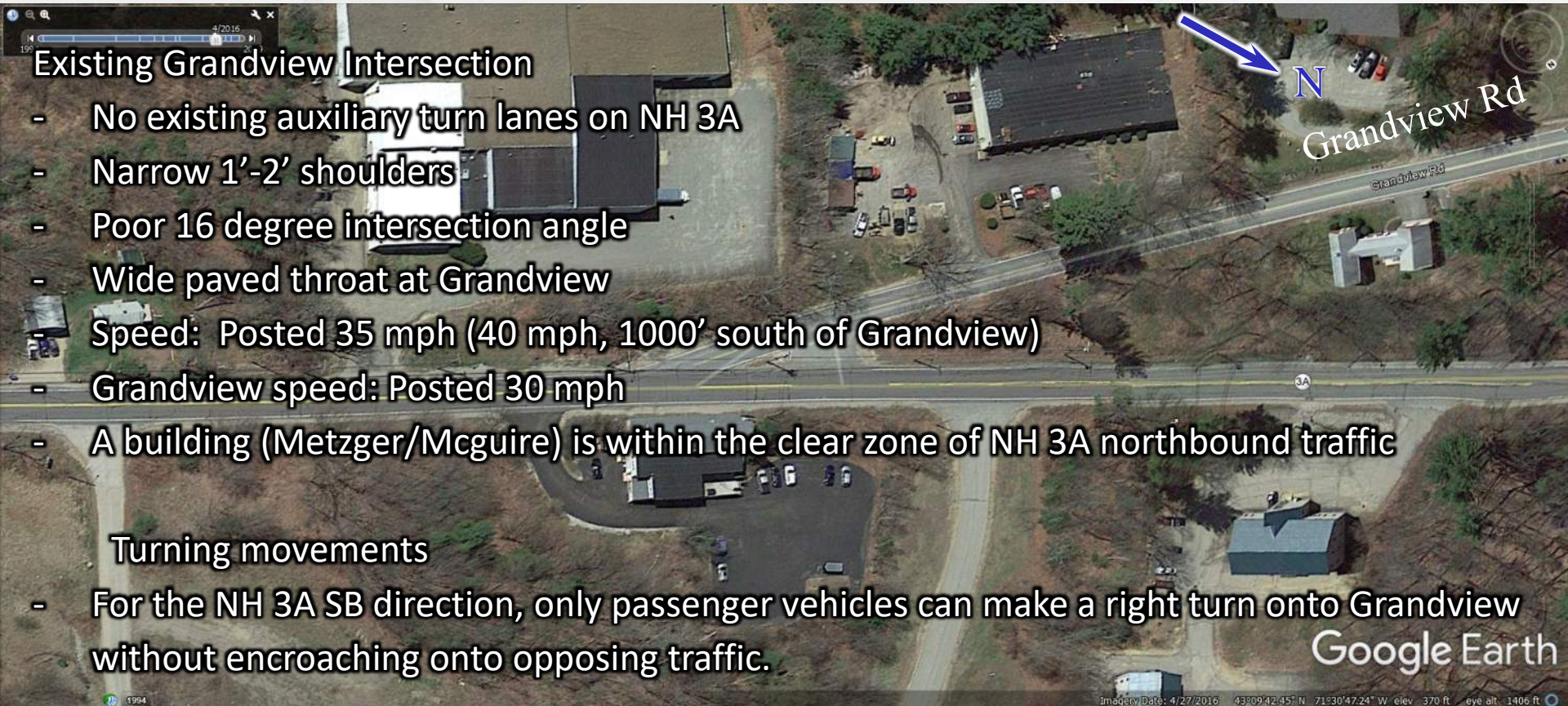
Grandview Rd

Existing Grandview Intersection

- No existing auxiliary turn lanes on NH 3A
- Narrow 1'-2' shoulders
- Poor 16 degree intersection angle
- Wide paved throat at Grandview
- Speed: Posted 35 mph (40 mph, 1000' south of Grandview)
- Grandview speed: Posted 30 mph
- A building (Metzger/Mcguire) is within the clear zone of NH 3A northbound traffic

Turning movements

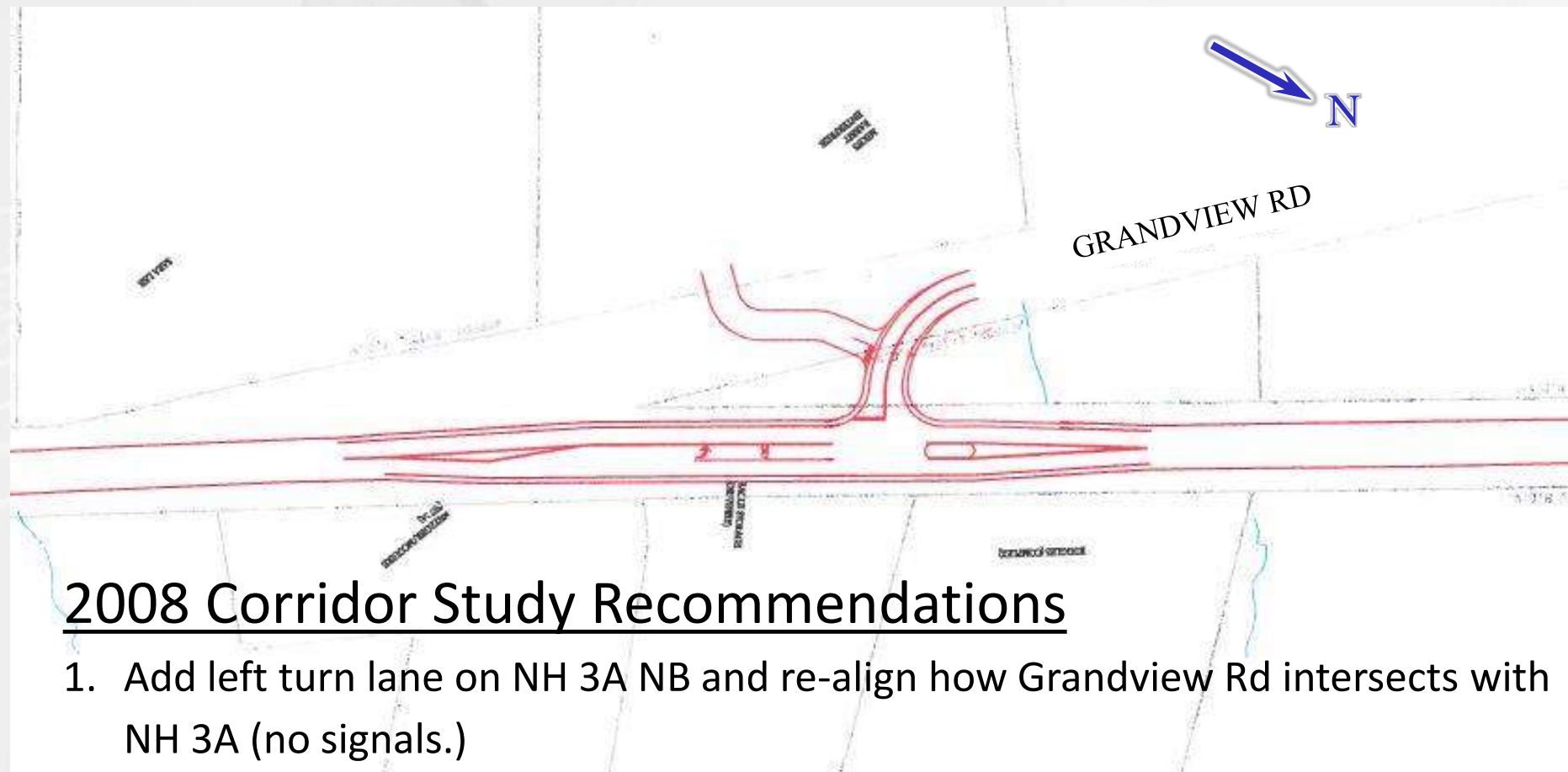
- For the NH 3A SB direction, only passenger vehicles can make a right turn onto Grandview without encroaching onto opposing traffic.



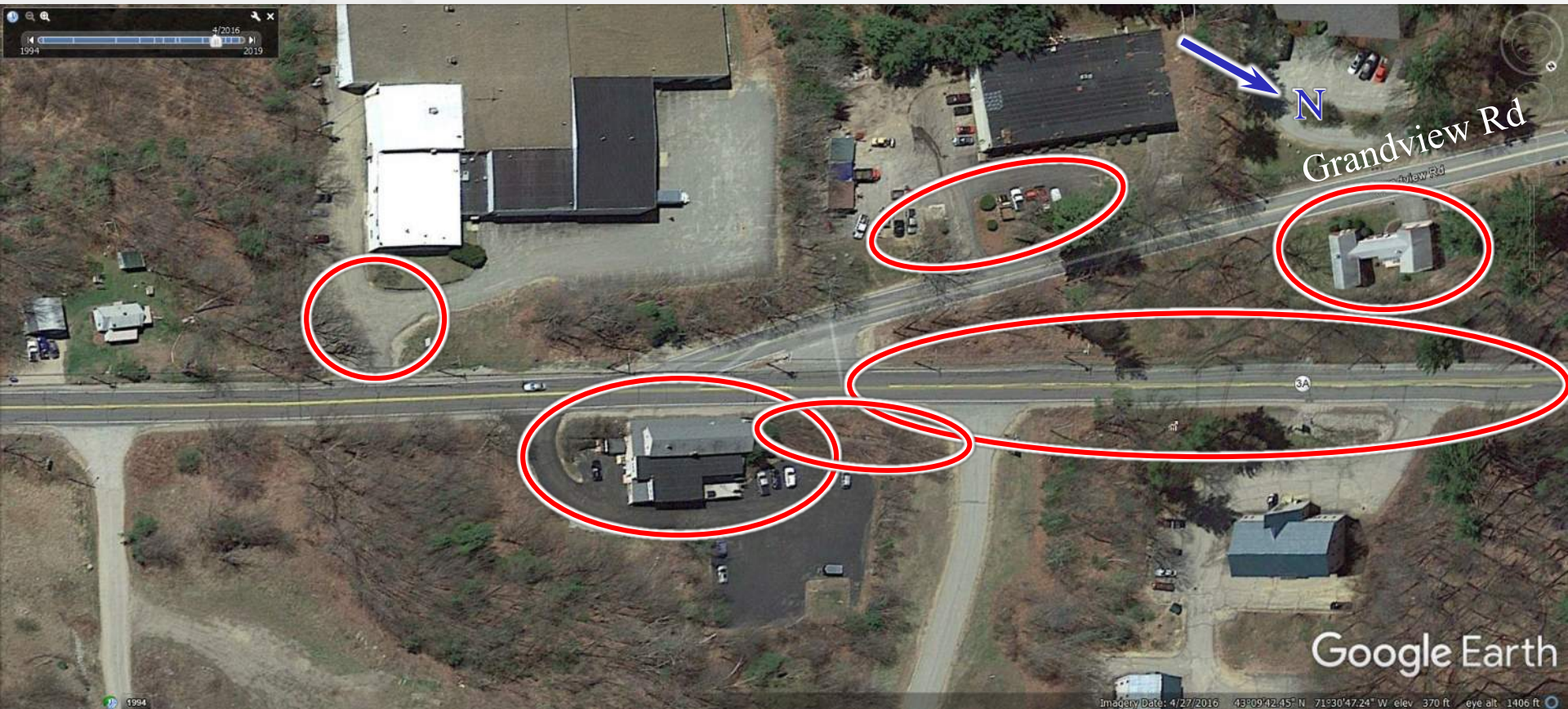
Grandview Rd

- There are 35 projected NB left turns during the PM peak hour (2022.)
- Between 2007 and 2017, there were 13 crashes at this intersection with 5 of those being northbound rear enders.

Grandview Rd



Grandview Rd



Controls/Sensitive Areas

- Proximity (w/in clear zone) of Metzger/McGuire Bldg (13.4' from tw)
- Relatively steep grade of NH 3A (6%) north of Grandview.
- Steep slopes and channel just north of Metzger/McGuire Bldg.
- Atlantic Air Products drive (looks like vehicles may be bottoming out today)
- Red house at 51 Grandview Rd (north side), 400' from intersection.
- Rabbit Enterprise drive and parking lot

Grandview Rd



Goals/Recommendations

- Add a northbound left turn lane on NH 3A
- Improve intersection angle (60 degrees or greater)
- Accommodate more turning vehicles.
- Shift the NH 3A alignment to provide adequate clear zone to the Metzger/McGuire building

Google Earth

Grandview Rd Improvement Concept

- Added 12' northbound left turn lane
- Up to a 2.7' shift in the NH 3A centerline away from the Metzger/McGuire Bldg
- 12' through lanes with 4' shoulders on NH 3A
- Modifications to NH 3A profile up to 1'
- Realignment of Grandview Rd
- Water quality swale provided

Construction Cost
\$1,500,000
(not including ROW)

(This is the preferred of several variations studied)

Improvement Benefits

- Provides NH 3A northbound left turn lane
- Improves the Grandview intersection angle with NH 3A from 16 to 60 degrees
- Accommodates more turning vehicles including a SB school bus and box truck turning right from NH 3A
- Shifts NH 3A away from the Metzger/McGuire building

Project Schedule

- Public Officials Meeting – Late Summer 2020
- Public Information Meeting – Fall 2020
- Survey and Preliminary Design – Summer/Fall 2020
- Public Hearing – Winter 2021
- Final Design – 2021
- Advertising – 2022
- Construction starting - 2022

End